WETLANDS

Wetland ecosystems are defined by three basic characteristics.

1. Recurrent, sustained saturation at or near the soil surface;
2. Hydric soils; and
3. Water-tolerant vegetation.

Wetlands have many functions, which include improving water quality, supplying water for recharge, providing habitat for wildlife and vegetation, providing flood control, soil erosion control, and providing recreational and educational opportunities.

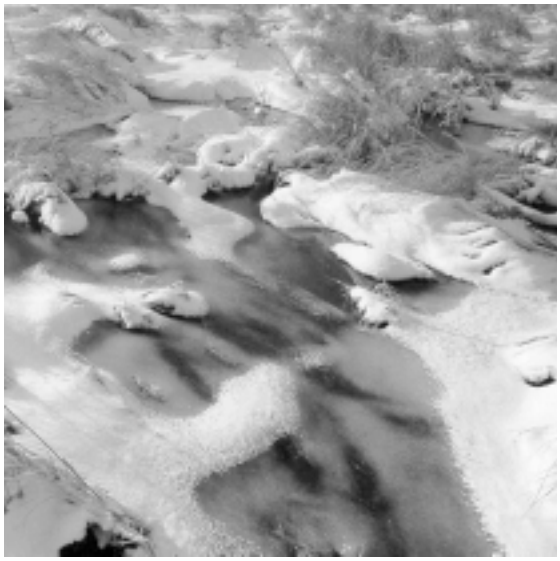
The City of Lincoln was settled because of two principle, and several minor, salt deposits that were discovered in the late 1800's located in wetlands along Oak and Salt Creeks. In fact, Salt Creek was named for this distinguishing feature. Unfortunately the salt mining industry did not prosper in Lancaster County, but it did help to settle the area and found what we now called the City of Lincoln.

Data Sources

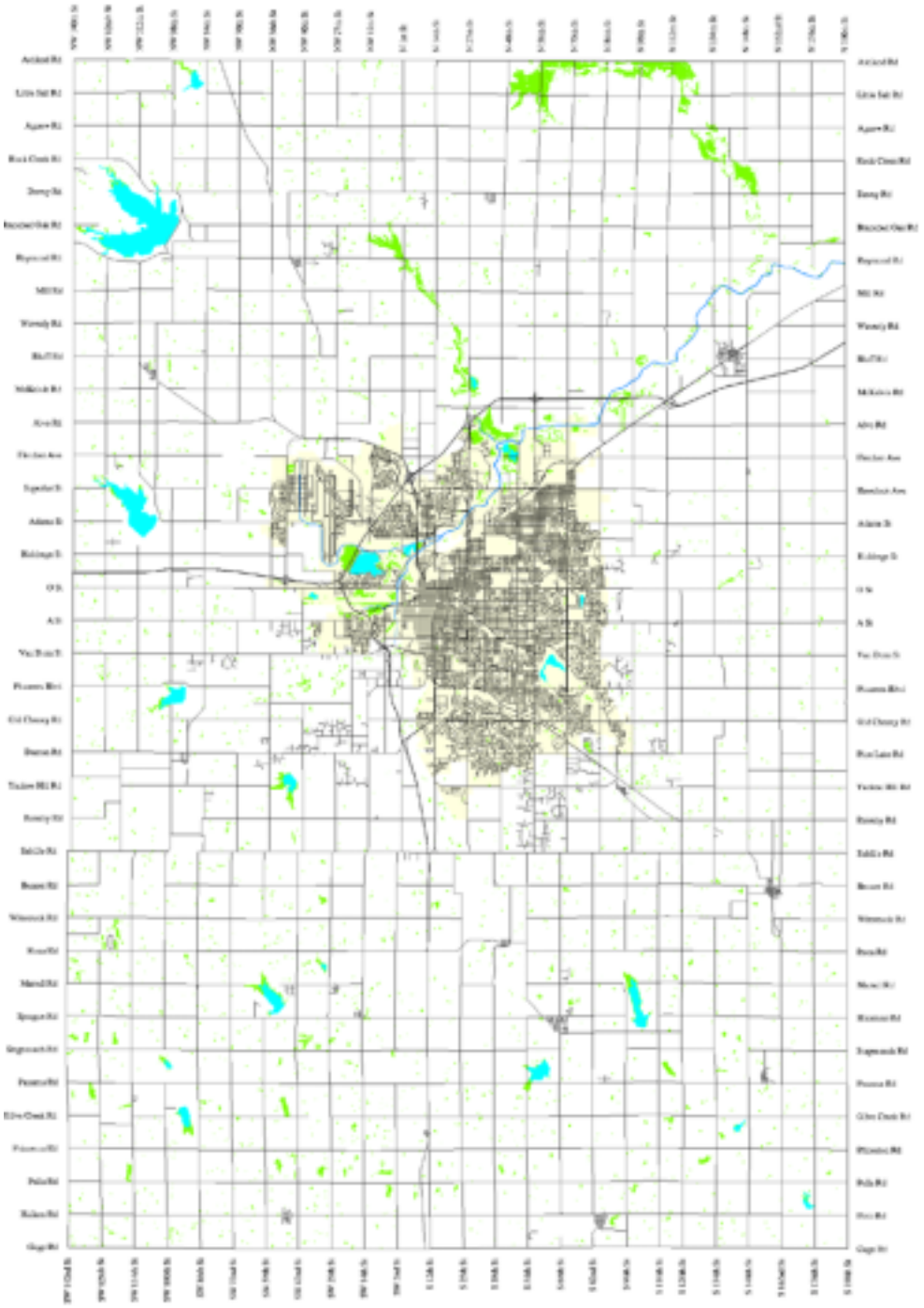
Information for this section comes from the US Fish and Wildlife Service, National Wetlands Inventory, Nebraska Game and Parks Commission, and US Environmental Protection Agency.

County Level Patterns and Perspectives

Wetlands in Lancaster County can be classified into two groups: saline and freshwater. Saline wetlands receive their salts from either saline groundwater, springs or through saline mineral deposits. Layers of shale in the Dakota Sandstone formation are the primary source of the salt that allows saline wetlands to exist in the County. Eastern Nebraska saline wetlands are located predominantly in the floodplain depressions of Salt, Little Salt and Rock Creeks in Lancaster and southern Saunders counties of Nebraska. These saline wetlands are only found here in Lancaster County and are very rare nationally. Freshwater wetlands are scattered across Lancaster County with the largest concentrations located around reservoirs and major streambeds (See Map 6, National Wetlands Inventory).



Photos: NEBRASKAland Magazine / Nebraska Game and Parks Commission



National Wetlands Inventory

Water within a channel flowing either permanently or intermittently (rivers)

Water in a depression, generally greater than 20 acres

Wetlands generally less than 20 acres and less than 2 meters deep (marshes)

Image by: Lincoln-Lancaster County Planning Department

Map 6

Environmental Imperatives and Planning Implications

An essential function of wetlands is to filter water before it infiltrates into the groundwater or drains through surface water. Wetlands store water and allow sediment and contaminants to settle out before exiting the wetland either into a stream or groundwater supply.

Additionally, wetlands produce more plant and animal life per acre than cropland, prairies, or forests. This high level of productivity makes wetlands an important habitat for a many different types of wildlife. Wetlands provide habitat during migration, breeding, and nesting for numerous species of waterfowl, shorebirds, songbirds, and other wildlife. Wetlands are home to thousands of different plant and animal species including several that are rare, threatened or endangered.

Many unique species find habitat in wetlands. Halophytes, or salt-tolerant vegetation, are present in the saline wetlands and include spearscale, inland saltgrass, saltwort, prairie bulrush, and sea blite. Nine of Nebraska's 12 Federal Endangered and Threatened Species use wetland areas. Additionally, the Salt Creek tiger beetle is found only in Lancaster County, and, according to the Nebraska Game and Parks Commission, its population has been decreasing as habitat is degraded or eliminated. Both the Salt Creek tiger beetle and saltwort are state listed as endangered species.

Photo: Tiger Bettle, by Leon Higley

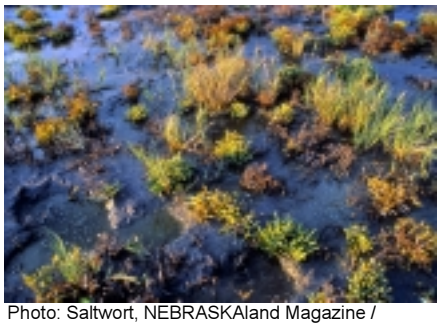


Photo: Saltwort, NEBRASKAland Magazine / Nebraska Game and Parks Commission

In addition to providing habitat for the diversification of wildlife and vegetative species, another function of wetlands is providing flood and soil erosion control. Wetlands can have immense storage capacity for floodwaters during storm events. This helps to slow water velocity and reduce the magnitude of flooding downstream.

Wetlands provide educational and recreation opportunities to residents of Lancaster County and are aesthetically pleasing. Both freshwater and saline wetlands can be integrated into amenities such as local nature trails and parks. Because remnants of inland saline wetlands are so uncommon in the United States, they can provide local educational opportunities of a nationally sensitive ecosystem.

If wetlands are to retain their functions and values, long-term buffers help to reduce the harsh impact of pollutants. Buffer size varies depending on the type of wetlands and the amount of infrastructure within a watershed. Buffers that are an average of 100 to 200 feet in width can help to reduce the excessive nutrification and sedimentation associated with non-point source pollution. Buffers can be utilized for many purposes and functions. The specific width of each buffer should be tailored to the function in which it will provide.

Wetlands are important ecosystems. Their national importance affords them regulatory protection under Section 404 of the Federal Clean Water Act. The US Army Corps of Engineers and the US Environmental Protection Agency provide oversight for the regulation of wetlands in a United States through a permitting process. Permits are required for lawful alteration of wetlands. While permits are required, development still occurs and sometimes degrades or eliminates wetland systems.

The successful maintenance and improvement of wetlands depends heavily on watershed planning. Runoff from the entire watershed can impact wetlands. Without appropriate watershed planning, freshwater and saline wetlands could be seriously impacted. Additional stormwater runoff and pollutants can seriously impair the essential functions of wetlands.

Additional Research Needs

The development of a quality rating for freshwater wetlands could be useful in determining man agement policies. Additionally, information regarding effective buffer widths for each types of wetland in Lancaster County as well as a cost benefit analysis for developing and/or preserving wetlands would be useful.

Photo: NEBRASKAland Magazine / Nebraska Game and Parks Commission